

LIFE HISTORY OF THE NARROW-WINGED PEARL WHITE *ELODINA PADUSA* (HEWITSON) (LEPIDOPTERA: PAPILIONOIDEA)

The pierid butterfly *Elodina padusa* (Fig. 1) occurs widely across northern Australia and south into central New South Wales and northern South Australia. It is commonly found close to its larval food plants, *Capparis* spp. A brief description of the early stages is given by Common & Waterhouse¹, but illustrations of these do not appear in any literature on Australian butterflies. A detailed description is provided here with illustrations and with notes on the life history, using material collected at Gammon Ranges National Park (30°30'S, 139°20'E), S. Aust.

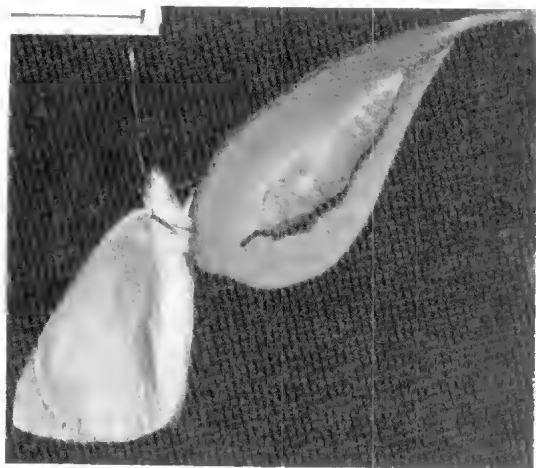


Fig. 1. *Elodina padusa*, recently emerged from its pupa. Bar scale 1 cm.

Larval food plant: *Capparis mitchelli* Lindley (native orange, Capparaceae), a shrub or small tree up to 4 m high and with ovate or broadly oblanceolate leaves.

Description of immature stages. Egg (Fig. 2A): height about 1 mm, diameter 0.5 mm; tapering uniformly to a blunt base and apex, with 16 vertical ridges of which some extend slightly beyond the apex and with numerous fine lateral lines; white at first, becoming pink or reddish.

First instar larva (Fig. 2B): length 2 mm; head yellow-green with setae projecting anteriorly; body pale yellow-green, each segment with raised subdorsal, lateral and sub-lateral grey or black spots, each with a long black seta curved anteriorly at first then becoming erect. On abdominal segments 1, 2 and 3 the spots are enclosed in a red area which sometimes extends dorsally across the segment, while some segments have a few additional raised spots and setae. Second instar larva (Fig. 2C): length 10 mm; head green with short setae; body pale green with a white dorsal line and numerous scattered setae, pro- and mesothorax and abdominal segments 2, 3, 4 and 8 with

dorsal red-brown tubercles, those on segment 2 most pronounced, posterior segment bifid.

Third instar larva (Fig. 2D): length 15 mm; head and body as in second instar but with dorsal red-brown tubercles usually prominent only on abdominal segments 2 and 8.

Fourth instar larva (Fig. 2E): length 20 mm, head and body as in third instar but prothorax with white dorsal area and several red-brown tubercles; dorsal line edged cream.

Pupa (Fig. 2F): length 18 mm; slender, pale green, anterior produced into a long tapering point; thorax with a dorsal ridge; abdomen with a faint dorsal and paired lateral white lines, tapering uniformly posteriorly, slightly flattened, ridged laterally and with three pairs of dorso-lateral brown spots.

Biology: Eggs are laid singly on either surface of the leaves of the food plant and occasionally on the stems. Young larvae make their first meal by eating a hole in the surface of a leaf, but in later instars larvae feed on the edges of leaves, their slender pale green bodies conforming cryptically with the eaten edge and thus providing some protection from predators and possibly parasitic insects. Pupation occurs on the leaves and stems of the food plant, the pupa being fastened by a cremaster and girdle. When attached to leaves the pupa is usually aligned with the central rib of the leaf and, as with the larva, the cryptic colour and shape make detection difficult.

Eggs collected in early March were reared in Adelaide and reached the adult butterfly stage an average of 29 days after eclosion. The larvae passed through four instars. Such a short cycle from egg to adult suggests that a number of generations of this butterfly may occur in a single year, or in a single summer season.

I thank the Wildlife Conservation Fund for financial assistance in field work, the National Parks and Wildlife Service for permission to collect material in Gammon Ranges National Park and A. E. Mitchell for the use of his vehicle.

¹Common, I. F. B. & Waterhouse, D. F. (1981). "Butterflies of Australia" Revised edition. (Angus and Robertson: Melbourne.)

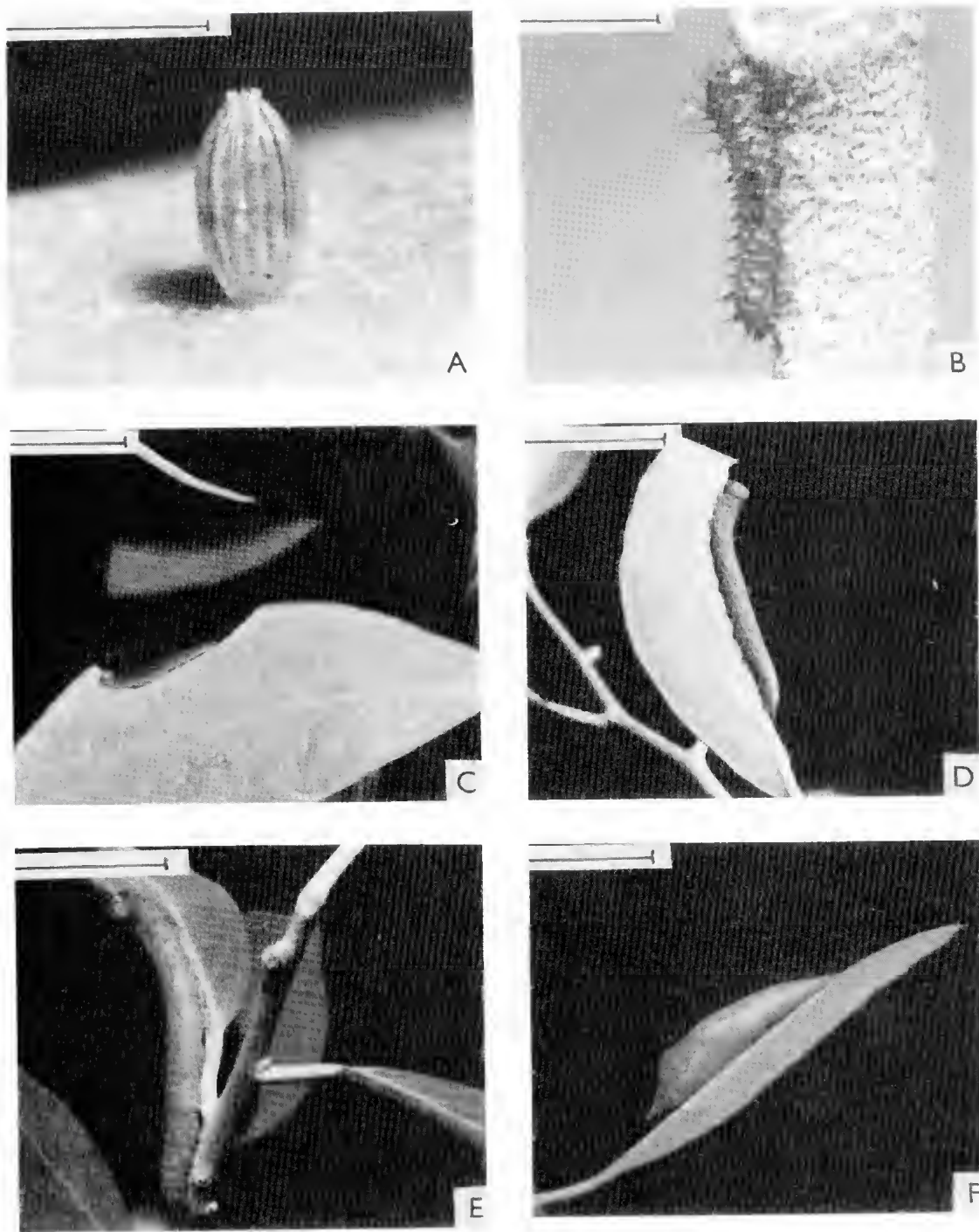


Fig. 2. *Elodina padusa*. A egg. B first instar larva. C second instar larva. D third instar larva. E fourth instar (mature) larva. F pupa. Bar scales A, B = 1 mm; C, D, E, F = 1 cm.